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# State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 25, 2000

TO: Internal File

FROM: Robert Davidson, Team Lead RAD

RE: Midterm Review, Lodestar Energy, Inc., Horizon Mine, ACT/007/020-MT99-3

**SUMMARY:**


In accordance with R645-303-211, the Division reviews each active permit during its midterm. The review was initiated at the mid-point of the permit term (April 10, 1999 for the Horizon Mine). However, because of overlapping problems with enforcement, the midterm review was put on hold for a year. The Midterm Review for the Horizon Mine is now being resumed and the items chosen for review encompass the following:

1. An AVS check to ensure that Ownership and Control information is current and correct.

2. A review of the plan to ensure that the requirements of all permit conditions, division orders, notice of violation abatement plans, and permittee-initiated plan changes are appropriately incorporated into the plan document. Especially important in light of the February 25, 1999 Order dealing with coal mine waste disposal.

3. A review of the applicable portions of the permit to ensure that the plan contains commitments for application of the best technology currently available (BTCA) to prevent additional contributions of suspended solids to stream flows outside of the permit area.

4. The Division will conduct a technical site visit in conjunction with the assigned compliance inspector to document the status and effectiveness of operational, reclamation, and contemporaneous reclamation practices.

5. An evaluation of the reclamation bond to ensure that coverage adequately addresses permit changes approved subsequent to permit approval.

# ENVIRONMENTAL RESOURCE INFORMATION

## SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-220, -301-411.

**Analysis:**

**Soils Description**

Chapter 8, Soil Resources, contains a general area 3rd order soils map (Pate2-2), but does not provide soil descriptions or characterization from the NRCS for each of the soils listed withing the permit area. Soil descriptions are needed as follows: #63, Midfork family-Podo association; #72, Pathead-Curecanti family association; #107, Shupert-Winetti complex; #109 Silas-Brycan loams; #124, Uinta family-Podo association.

**Findings:**

The information provided does not meet the minimum regulatory requirements of this section. The permittee must provide the following, prior to approval, in accordance with the requirements of:

**R645-301-222.300,** Provide soil descriptions as follows: #63, Midfork family-Podo association; #72, Pathead-Curecanti family association; #107, Shupert-Winetti complex; #109 Silas-Brycan loams; #124, Uinta family-Podo association.

# OPERATION PLAN

## TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

**Analysis:**

The Midterm Permit Review covers the following operational considerations for soil salvage and protection of the soil resource:

- Contemporaneous Reclamation Areas
- Soil Salvage Updates

- Toxic and Acid Forming Mine Waste
- Midterm On-Site Visit

**Contemporaneous Reclamation Areas**

Section 8.8.1, Re-soiled Areas, describes areas A, B, C, D, and E within the mine disturbed area that have received topsoil as outlined in Appendix 8-1, Plate A. After redistributing the soil to these identified areas, the surface was seeded, fertilized and stabilized as described in Section 3.5.1. The plan states that the "re-soiled" areas will be retained and not re-disturbed except as noted on Plate 3-7. Plate 3-7 shows reclamation topography with contemporaneous reclamation areas identified as either not to be re-disturbed or to be disturbed. As identified on Plate 3-7, portions of "contemporaneous" reclaimed areas to be re-disturbed include Areas A, B, D and E. However, Section 8.8.1 does not explain what topsoil protection measures will be used to protect the topsoil resources within the identified areas of contemporaneous reclamation to be re-disturbed during final reclamation.

Section 8.8.1, Re-soiled Areas, describes that during 1998, the old fan portal and corresponding access road were re-soiled and reclaimed by White Oak Mining and Construction. No record exits as to the topsoil source, volumes, or characteristics. The plan assumes that the soil was pulled from the side-cast soils along the access road. Plate 3-7 identifies this area as being contemporaneously reclaimed.

**Soil Salvage Updates**

Appendix 8-1 contains a "Soil Salvage Practices" report. The report is dated December 15, 1996 and documents the amounts and volumes of soil salvaged from each location at the start of construction. Appendix 1 of that report shows that 15,314 loose cubic yards was salvaged from the mine site. Subtracting the estimated 3733 in-place cubic yards from Area 10 and 11, the amount of soil salvaged is documented at 11,581 cubic yards. Allowing an 87.5 % compaction factor, the amount of soil in the stockpile should be 10,133 compacted cubic yards. In the current approved MRP, Appendix 8-1 "Topsoil Stockpile Table" shows a surveyed 10,993 in-place cubic yards in the topsoil stockpile. This amount agrees closely with the documented amount of soil salvaged from the "Soil Salvage Practices" report. The 1996 topsoil stockpile survey is not included with the table for verification.

As identified in the table, the volume of soils after adjustments is currently set at 10,774 cubic yards. Including in-place soils in Areas 10 and 11, the volume of soil available for reclamation is 14,507 cy. A table footnote shows that 90 cubic yards of soil were placed on Area E, thus reducing available reclamation topsoil to 14,417 cubic yards. A separate topsoil stockpile placed over the main topsoil stockpile contains 156 cubic yards of riparian soil. Soils placed on Areas A, B and C were obtained from county road construction. The resulting 975 cubic yards of soil used in Areas A, B and C is not included in the volume of soils available for final reclamation. Plate A, Appendix 8-1, shows soil distribution within the disturbance area. These are correlated with the Table in Appendix 8-1 for topsoil recovery and placement as follows:

| SOIL SOURCE | CUBIC YARDS | PLATE A LEGEND |
|---|---|---|
| topsoil salvaged in 1996 by surveying topsoil stockpile | 10,993 | |
| topsoil redistributed (Area D) 1997 from stockpile | (499) | red & green |
| Topsoil stockpile 1998 | 10494 | |
| Area E riparian soil | 156 | |
| Area E non-riparian soil | 124 | |
| Area E non-riparian soil placement | (90) | purple |
| total salvaged soils | 10684 | |
| Areas 10 & 11 in-place soils | 3733 | |
| Total soils available for final reclamation | 14417 | |
| 1997 Imported soils Areas A, B, & C | 975 | blue & purple hatch |

In November 1999, Horizon dug several test pits within the topsoil stockpile boundary to verify the amount of topsoil in the stockpile. The plan states that pit locations were selected according to the cross-sections designated on Plate 8-3. Depths were measured in each of the pits. A "1999 Topsoil Quantity" table is included in Section 8.8.1 which cross references Plate 8-3 cross sections, area, pit depth and calculated topsoil depth. However, the table is unclear and contains numerous calculation errors. According to information presented in the November 1999 topsoil stockpile survey, only 2458 cubic yards of topsoil currently exists in the stockpile with 11,959 cubic yards of topsoil either lost or not accounted for in the survey. According to information presented, the Division is unable to make a determination verifying the topsoil stockpile volumes as shown in the Appendix 8-1 Topsoil Stockpile Table.

The topsoil stockpile was disturbed during repair of a crushed culvert during portal construction. Stockpiled soils were redistributed to Area D as shown on Plate A of Appendix 8-1. The crushed culvert (UC-2) was repaired and reinstalled within the topsoil stockpile. Fill material placed around the reinstalled culvert consisted of topsoil from the pile. Since the stockpile was severely impacted and soils removed and used as fill, the plan needs to provide soil stockpile survey information that will help verify past and current volumes of topsoil. Section 8.8.1 succinctly states that the Topsoil Stockpile Table provided in Appendix 8-1 was created by two separate surveys, once in May of 1997 and again in September/October 1997. These topsoil stockpile surveys need to be included in the plan so that the Division can verify the surveyed quantity of topsoil in the pile.

Plate 8-3, Topsoil Stockpile and Cross-Sections, shows what is presumed to be the topsoil stockpile. However, a stockpile cannot be located nor delineate on the drawing. Contours are discontinuous. Furthermore, the Plate shows that soil has been excavated from the area, not stockpiled, with operations topography below the pre-mining topography. The current topsoil stockpile dimensions, configuration, cross sections and resulting depth, area, and soil volumes need to be determined based on (1) the current operation contour lines as shown on Plate A, Appendix 8-1, Topsoil/Growth Medium Distribution, and on (2) the proposed reclamation contour lines as shown on Plate 3-7, Reclamation Topography. Appropriate mathematical integration and engineering calculations must be applied to clearly delineate the topsoil stockpile.

**Toxic and Acid Forming Mine Waste**

The plan states that no toxic or acid forming mine waste exists on the site. This statement is in error since toxic forming, high boron coal waste was buried in the facility pad during site construction. The volume of waste was considerable since it consisted primarily of the coal waste berm that traversed the pre-constructed site. Since toxic coal waste is buried in the facility pad, the plan needs to commit that during reclamation excavation, if any waste is uncovered, that it be properly placed and buried beneath 4 feet of non-toxic fill.

**Midterm On-Site Visit**

An on-site visit associated with the Midterm Permit Review took place on April 20, 1999. Division personnel present included the Mine Inspector, Bill Malencik; Permit Supervisor, Daron Haddock; and Reclamation Specialists, Susan White, Wayne Western, Sharon Falvey, and Robert Davidson. Horizon Mining, LLC, was represented by EarthFax Engineering, Vicky Miller.

**Findings:**

The information provided does not meet the minimum regulatory requirements of this section. The permittee must provide the following, prior to approval, in accordance with the requirements of:

**R645-301-231.400 and R645-301-234.300,** Explain what topsoil protection measures will be used to protect the topsoil resources within the "contemporaneous" reclamation areas that are identified to be re-disturbed during final reclamation.

**R645-301-231.400, R645-301-120 and R645-301-130, 234.200,** To verify past and current volumes of topsoil in the topsoil stockpile provide the following: (1) Correct and accurately present information for the November 1999 topsoil stockpile survey. Appropriate mathematical integration and engineering calculations must be applied to clearly delineate the topsoil stockpile. (2)

Include the May 1997 and September/October 1997 topsoil stockpile surveys. Provide field notes, calculations, and analyses used to derive the volumes as shown in the Appendix 8-1 "Topsoil Stockpile Table."

**R645-301-521, R645-301-521.150 and R645-301-521.165,** Determine the current topsoil stockpile dimensions, configuration, cross sections and resulting depth, area, and soil volumes based on (1) the current operation contour lines as shown on Plate A, Appendix 8-1, Topsoil/Growth Medium Distribution, and on (2) the proposed reclamation contour lines as shown on Plate 3-7, Reclamation Topography.

**R645-301-120 and R645-301-553.260,** Commit that during reclamation excavation, if any of the toxic coal waste that is currently buried in the pad fill is uncovered, that it be properly placed and buried beneath four feet of non-toxic fill.

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